

110TH CONGRESS  
1ST SESSION

# H. R. 1068

To amend the High-Performance Computing Act of 1991.

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IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 15, 2007

Mr. BAIRD (for himself and Mrs. BIGGERT) introduced the following bill;  
which was referred to the Committee on Science and Technology

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## A BILL

To amend the High-Performance Computing Act of 1991.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*

3       **SECTION 1. HIGH-PERFORMANCE COMPUTING RESEARCH**

4                       **AND DEVELOPMENT PROGRAM.**

5       Title I of the High-Performance Computing Act of  
6       1991 (15 U.S.C. 5511 et seq.) is amended—

7               (1) in the title heading, by striking “**AND**  
8       **THE NATIONAL RESEARCH AND EDU-**  
9       **CATION NETWORK**” and inserting “**RE-**  
10       **SEARCH AND DEVELOPMENT**”;

11               (2) in section 101(a)—

1 (A) by striking subparagraphs (A) and (B)  
2 of paragraph (1) and inserting the following:

3 “(A) provide for long-term basic and applied re-  
4 search on high-performance computing;

5 “(B) provide for research and development on,  
6 and demonstration of, technologies to advance the  
7 capacity and capabilities of high-performance com-  
8 puting and networking systems;

9 “(C) provide for sustained access by the re-  
10 search community in the United States to high-per-  
11 formance computing systems that are among the  
12 most advanced in the world in terms of performance  
13 in solving scientific and engineering problems, in-  
14 cluding provision for technical support for users of  
15 such systems;

16 “(D) provide for efforts to increase software  
17 availability, productivity, capability, security, port-  
18 ability, and reliability;

19 “(E) provide for high-performance networks, in-  
20 cluding experimental testbed networks, to enable re-  
21 search and development on, and demonstration of,  
22 advanced applications enabled by such networks;

23 “(F) provide for computational science and en-  
24 gineering research on mathematical modeling and al-

gorithms for applications in all fields of science and engineering;

“(G) provide for the technical support of, and research and development on, high-performance computing systems and software required to address Grand Challenges;

“(H) provide for educating and training additional undergraduate and graduate students in software engineering, computer science, computer and network security, applied mathematics, library and information science, and computational science; and

“(I) provide for improving the security of computing and networking systems, including Federal systems, including research required to establish security standards and practices for these systems.”;

(B) by striking paragraph (2) and redesignating paragraphs (3) and (4) as paragraphs (2) and (3), respectively;

(C) in paragraph (2), as so redesignated by subparagraph (B) of this paragraph—

(i) by striking subparagraph (B);

(ii) by redesignating subparagraphs (A) and (C) as subparagraphs (D) and (F), respectively;

1 (iii) by inserting before subparagraph  
2 (D), as so redesignated by clause (ii) of  
3 this subparagraph, the following new sub-  
4 paragraphs:

5 “(A) establish the goals and priorities for Fed-  
6 eral high-performance computing research, develop-  
7 ment, networking, and other activities;

8 “(B) establish Program Component Areas that  
9 implement the goals established under subparagraph  
10 (A), and identify the Grand Challenges that the Pro-  
11 gram should address;

12 “(C) provide for interagency coordination of  
13 Federal high-performance computing research, devel-  
14 opment, networking, and other activities undertaken  
15 pursuant to the Program;” and

16 (iv) by inserting after subparagraph  
17 (D), as so redesignated by clause (ii) of  
18 this subparagraph, the following new sub-  
19 paragraph:

20 “(E) develop and maintain a research, develop-  
21 ment, and deployment roadmap for the provision of  
22 high-performance computing systems under para-  
23 graph (1)(C); and”; and

24 (D) in paragraph (3), as so redesignated  
25 by subparagraph (B) of this paragraph—

1 (i) by striking “paragraph (3)(A)”  
2 and inserting “paragraph (2)(D)”;

3 (ii) by amending subparagraph (A) to  
4 read as follows:

5 “(A) provide a detailed description of the Pro-  
6 gram Component Areas, including a description of  
7 any changes in the definition of or activities under  
8 the Program Component Areas from the preceding  
9 report, and the reasons for such changes, and a de-  
10 scription of Grand Challenges supported under the  
11 Program;”;

12 (iii) in subparagraph (C), by striking  
13 “specific activities” and all that follows  
14 through “the Network” and inserting  
15 “each Program Component Area”;

16 (iv) in subparagraph (D), by inserting  
17 “and for each Program Component Area”  
18 after “participating in the Program”;

19 (v) in subparagraph (D), by striking  
20 “applies;” and inserting “applies; and”;

21 (vi) by striking subparagraph (E) and  
22 redesignating subparagraph (F) as sub-  
23 paragraph (E); and

24 (vii) in subparagraph (E), as so redes-  
25 ignated by clause (vi) of this subpara-

1 graph, by inserting “and the extent to  
2 which the Program incorporates the rec-  
3 ommendations of the advisory committee  
4 established under subsection (b)” after  
5 “for the Program”;

6 (3) by striking subsection (b) and inserting the  
7 following:

8 “(b) ADVISORY COMMITTEE.—(1) The President  
9 shall establish an advisory committee on high-performance  
10 computing consisting of non-Federal members, including  
11 representatives of the research, education, and library  
12 communities, network providers, and industry, who are  
13 specially qualified to provide the Director with advice and  
14 information on high-performance computing. The rec-  
15 ommendations of the advisory committee shall be consid-  
16 ered in reviewing and revising the Program. The advisory  
17 committee shall provide the Director with an independent  
18 assessment of—

19 “(A) progress made in implementing the Pro-  
20 gram;

21 “(B) the need to revise the Program;

22 “(C) the balance between the components of the  
23 Program, including funding levels for the Program  
24 Component Areas;

1 “(D) whether the research and development un-  
2 dertaken pursuant to the Program is helping to  
3 maintain United States leadership in high-perform-  
4 ance computing and networking technology; and

5 “(E) other issues identified by the Director.

6 “(2) In addition to the duties outlined in paragraph  
7 (1), the advisory committee shall conduct periodic evalua-  
8 tions of the funding, management, coordination, imple-  
9 mentation, and activities of the Program, and shall report  
10 not less frequently than once every two fiscal years to the  
11 Committee on Science of the House of Representatives  
12 and the Committee on Commerce, Science, and Transpor-  
13 tation of the Senate on its findings and recommendations.  
14 The first report shall be due within one year after the date  
15 of enactment of this paragraph.

16 “(3) Section 14 of the Federal Advisory Committee  
17 Act shall not apply to the advisory committee established  
18 by this subsection.”; and

19 (4) in subsection (c)(1)(A), by striking “Pro-  
20 gram or” and inserting “Program Component Areas  
21 or”.

22 **SEC. 2. DEFINITIONS.**

23 Section 4 of the High-Performance Computing Act  
24 of 1991 (15 U.S.C. 5503) is amended—

1           (1) in paragraph (2), by inserting “and multi-  
 2           disciplinary teams of researchers” after “high-per-  
 3           formance computing resources”;

4           (2) in paragraph (3)—

5                 (A) by striking “scientific workstations,”;

6                 (B) by striking “(including vector super-  
 7           computers and large scale parallel systems)”;

8                 (C) by striking “and applications” and in-  
 9           serting “applications”; and

10                (D) by inserting “, and the management of  
 11           large data sets” after “systems software”;

12           (3) in paragraph (4), by striking “packet  
 13           switched”;

14           (4) by striking “and” at the end of paragraph  
 15           (5);

16           (5) by striking the period at the end of para-  
 17           graph (6) and inserting “; and”; and

18           (6) by adding at the end the following new  
 19           paragraph:

20                “(7) ‘Program Component Areas’ means the  
 21           major subject areas under which are grouped related  
 22           individual projects and activities carried out under  
 23           the Program.”.

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